

REMARKS

Claims 1-23 are pending in the application. Claims 1-3 and 5-23 are rejected. Claims 11-18 are allowed. Claim 1 has been amended for clarity. Claim 10 has been amended to correct the misspelling of TETA. No new matter is introduced with these amendments.

Reply to the Rejection of Claims 9 and 10 under 35 U.S.C. § 112, second paragraph

The Examiner has rejected Claims 9 and 10 as being indefinite. Specifically, the Examiner states –

The reference to the compounds of claims 9 and 10 as groups renders the claims indefinite. Within the chemical arts, a chemical group refers to a substituents that is present on or within a compound. For example, an amine group is a chemical group that is a substituents of an amine compound. Therefore, it is unclear how applicants' chemical groups (compounds) relate to the backbone of claim 1. Despite applicants' response, it remains unclear how the hydrophobic backbone can comprise the specified compounds. If the compounds react to form the backbone, then the backbone would comprise the residues of the compounds.

For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 9 and 10 under 35 U.S.C. 112, second paragraph.

Claim 1 has been amended for clarity to indicate that the reactive backbone is derived from the chemical groups of claims 9 and 10. Support for this amendment is found at p. 12, Example 1 of the present description wherein it is illustrated that the reactive hydrophobic backbone is derived from the reactive chemical group hexamethylene diamine (HMDA).

It is believed that the above amendments and remarks overcome the rejection of claims 9 and 10 as being indefinite under 35 U.S.C. § 112, second paragraph. Withdrawal of the rejection of claims 9 and 10 for indefiniteness, therefore, is respectfully requested.

Reply to the Rejection of Claims 1-3, 5-10 and 19-23 under 35 U.S.C. § 112, first paragraph

The Examiner has rejected Claims 1-3, 5-10 and 19-23 as failing to comply with the written description requirement. Specifically, the Examiner states –

Applicants claimed that the resin contains no tertiary nitrogen groups; however applicants have specified within claim 10 that secondary amine containing compounds may form the backbone. Therefore, it would seem that the reaction of the carbon disulfide with the secondary amine groups of these backbone

compounds would yield tertiary nitrogen groups, and applicants have provided no guidance to prevent such a result.

For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 1-3, 5-10 and 19-23 under 35 U.S.C. § 112, first paragraph.

To satisfy the written description requirement, a patent specification must describe the claimed invention in sufficient detail that one skilled in the art can reasonably conclude that the inventor had possession of the claimed invention (*i.e.*, the description provides "adequate support" for the claimed invention). In other words, "how much description is enough?" Possession can be shown in a variety of ways, including description of an actual reduction to practice, by describing distinguishing identifying characteristics, or by the disclosure of drawings or structural chemical formulas that show the invention was complete (*see, e.g., Univ. Calif. v. Eli Lilly*, 119 F.3d at 1568, 43 USPQ2d 1398, 1406 stating –

In claims involving chemical materials, generic formulae usually indicate with specificity what the generic claims encompass. One skilled in the art can distinguish such a formula from others and can identify many of the species that the claims encompass. Accordingly, such a formula is normally an adequate description of the claimed genus.

(Fed. Cir. 1997)).

Claim 1 has been amended to state that the resin contains no amine groups. Support for this amendment is found on pp. 5-6 of the description and illustrated in Schemes I and II on pp. 7-9 of the description. Schemes I and II clearly illustrate that the resin produced according to the process of the present invention contains no tertiary amine groups. One skilled in the art considering Schemes I and II would understand that the resin is without tertiary amine groups. Accordingly, no new matter is introduced by this amendment, and the amendment is fully supported by the written description.

It is believed that the above amendments and remarks overcome the Examiner's rejection of claims 1-3, 5-10 and 19-23 as failing to comply with the written description requirement. Withdrawal, therefore, of the rejection of claims 1-3, 5-10 and 19-23 under 35 U.S.C. 112, first paragraph is respectfully requested.

Reply to the Rejection of Claims 1-3, 5-10 and 19-23 under 35 U.S.C. § 112, 1st paragraph

The Examiner has rejected Claims 1-3, 5-10 and 19-23 as failing to comply with the enablement requirement. Specifically, the Examiner states –

Applicants claimed that the resin contains no tertiary nitrogen groups; however applicants have specified within claim 10 that secondary amine containing compounds may form the backbone. Therefore, it would seem that the reaction of the carbon disulfide with the secondary amine groups of these backbone compounds would yield tertiary nitrogen groups, and applicants have provided no guidance to prevent such a result.

For the following reasons, Applicants respectfully traverse the Examiner's rejection of claims 1-3, 5-10 and 19-23 under 35 U.S.C. 112, first paragraph.

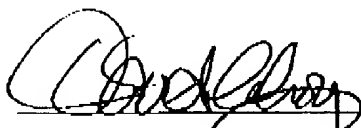
Applicants respectfully direct the Examiner's attention to Examples 1, 2 and 6 of the present description wherein it is illustrated that secondary amine containing compounds (HMDA and PETA claimed in claim 10) do not yield tertiary amine groups when reacted with CS₂. Example 4 is illustrative of the reaction of a triamine similar to the triamines DETA and TETA claimed in claim 10. Like HMDA and PETA, it does not yield tertiary amine groups when reacted with CS₂. Therefore, from the examples it is shown that reacting carbon disulfide with the claimed amine reactive group does NOT yield tertiary nitrogen groups.

It is believed that the above amendments and remarks overcome the Examiner's rejection of claims 1-3, 5-10 and 19-23 as failing to comply with the enablement requirement. Withdrawal, therefore, of the rejection of claims 1-3, 5-10 and 19-23 under 35 U.S.C. 112, first paragraph for lack of enablement is respectfully requested.

It is believed that the above remarks and amendments overcome the rejections of the claims for indefiniteness, written description compliance and nonenablement. Allowance of the claims is believed to be in order, and such allowance is respectfully requested.

Dated: 3 August 2004

NATIONAL STARCH AND CHEMICAL COMPANY
Post Office Box 6500
Bridgewater, New Jersey 08807-0500
Phone 908.683.5433
Fax 908.707.3706


David P. LeCroy
Attorney for Applicants
Reg. No. 37,869